**SQL LOADER**

SQL Loader is a utility that allows you to load data of different format into Oracle.

These formats include delimited text file, csv file, etc...

There are two important parts to running SQL Loader:

* The SQL Loader command line
* The control file

**COMPONENTS OF SQL\*LOADER**

* **Data File:** It is a flat file containing the data to be loaded in the oracle table. Each line contains one record to be loaded in the table. Each field in the data file is separated by a separator character.
* **Control File:** It is a text file written in a language that SQL Loader understands. It tells SQL Loader where to find the data, how to parse and interpret the data, where to insert the data, and more. In other words, we can say that control file is a mapping file containing the mapping from the data file to oracle table.
* **Log File:** The log file contains information about the SQL\*loader execution. It should be viewed after each SQL\*Loader job is complete. It even consists of the summary information at the bottom of the log, including CPU time and elapsed time.
* **Bad File:** This contains the records which are rejected either by SQL

Loader or by the database because of the bad formatting or data type mismatch.

* **Discard File:** Thisis to store the records that are neither inserted into table nor rejected as *bad*. As the name indicates these records are discarded by the SQL Loader because they were filtered out with the record selection criteria mentioned in the control file commands. This file creates only when needed.

**TYPES OF LOAD**

* **Conventional loads:** A conventional path load executes SQL INSERT statements to populate tables in an Oracle database. SQL\*Loader, by default uses the conventional path loading.
* **Direct loads:** A direct path load eliminates much of the Oracle database overhead by formatting Oracle data blocks and writing the data blocks directly to the database files.

**INSERT MODES**

* **Insert:** This is used only when the table is empty while running the SQL\*Loader. This is the default mode.
* **Append:** This is used when data needs to be appended into the target table which may or may not have records while running the SQL\*Loader.
* **Truncate:** This mode truncates the target table and then inserts the records.
* **Replace:** This deletes the records in the target table and loads the data.

1. Using NVL function

2. Using Decode Function

3. Using Case Function

4. Using Truncate, Replace, Insert, Append

5. Using Constant

6. Using Filler

7. Using Upper, Lower

8. Using begindata

9. Using Trailingnullcols

10. Using When condition

11. Using Direct Path Load

12. Using Date column to load

13. Using Sequence

14. Using load

15. Loading from single file into multiple tables

16. Loading from multiple files to single table.

17.Using concat

18.Comma in address field

Create Input file in txt format

10,hr,India

20,sales,Us

30,Accounts,Uk

Create control file in txt format

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\ SQL\_LDR\INPUT.CSV'

INSERT INTO TABLE CUST\_SQLDR

FIELDS TERMINATED BY ','

(CUST\_ID,CUST\_NM,CUST\_PH,CUST\_CT)

Go to command Prompt

>Sqlldr scott/tiger control= 'E:\SQL\_LDR\CONTROL.TXT' log=’E:\SQL\_LDR\log.TXT’

**HOW IT REALLY WORKS**

* INSERT MODE

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\ SQL\_LDR\INPUT.CSV'

INSERT INTO TABLE CUST\_SQLDR

FIELDS TERMINATED BY ','

(CUST\_ID,CUST\_NM,CUST\_PH,CUST\_CT)

* TRUNCATE MODE

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\ SQL\_LDR\INPUT.CSV'

INTO TABLE CUST\_SQLDR TRUNCATE

FIELDS TERMINATED BY ','

(CUST\_ID,CUST\_NM,CUST\_PH,CUST\_CT)

* REPLACE

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\ SQL\_LDR\INPUT.CSV'

INTO TABLE CUST\_SQLDR REPLACE

FIELDS TERMINATED BY ','

(CUST\_ID,CUST\_NM,CUST\_PH,CUST\_CT)

* TO HANDLE NULLS IN THE FLAT FILE

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\ SQL\_LDR\INPUT.CSV'

BADFILE 'E:\ SQL\_LDR\BAD\_FL.TXT'

DISCARDFILE 'E:\ SQL\_LDR\DIS\_FL.TXT'

INTO TABLE CUST\_SQLDR TRUNCATE

FIELDS TERMINATED BY ','

TRAILING NULLCOLS

(CUST\_ID,CUST\_NM,CUST\_PH,CUST\_CT)

* TO LOAD ONLY THE REQUIRED RECORDS/FILTER THE UNWANTED RECORDS

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\SQL\_LDR\INPUT.CSV'

BADFILE 'E:\SQL\_LDR\BAD\_FL.TXT'

DISCARDFILE 'E:\SQL\_LDR\DISC\_FL.TXT'

INTO TABLE CUST\_SQLDR TRUNCATE

WHEN CUST\_CT='BAN'

FIELDS TERMINATED BY ','

(CUST\_ID,CUST\_NM,CUST\_PH,CUST\_CT)

(HERE RECORDS OTHER THAN 'BAN' ARE LOADED TO DISCARD FILE)

* TO LOAD THE DATA WHICH IS IN CONTROL FILE ITSELF

LOAD DATA

INFILE \*

BADFILE 'E:\SQL\_LDR\BAD\_FL.TXT'

DISCARDFILE 'E:\SQL\_LDR\DISC\_FL.TXT'

INTO TABLE CUST\_SQLDR TRUNCATE

FIELDS TERMINATED BY ','

(CUST\_ID,CUST\_NM,CUST\_PH,CUST\_CT)

BEGINDATA

101,MANU,123451,BAN

102,AMAR,123452,CHN

103,ANATH,123453,BAN

104,BHUVAN,123454,HYD

105,PARNAV,123455,GUL

* DATA IN THREE SOURCES

LOAD DATA

INFILE \*

BADFILE 'E:\SQL\_LDR\BAD\_FL1.TXT'

INFILE 'E:\SQL\_LDR\INPUT\_1.TXT'

BADFILE 'E:\SQL\_LDR\BAD\_FL2.TXT'

INFILE 'E:\SQL\_LDR\INPUT\_2.TXT'

BADFILE 'E:\SQL\_LDR\BAD\_FL3.TXT'

INTO TABLE CUST\_SQLDR TRUNCATE

FIELDS TERMINATED BY ','

(CUST\_ID,CUST\_NM,CUST\_PH,CUST\_CT)

BEGINDATA

107,AKASH,123498,DEL

108,ARPITA,123460,MUM

* WHEN LOADING DATE FROM FLAT FILE TO TABLE

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\SQL\_LDR\INPUT\_1.TXT'

BADFILE 'E:\SQL\_LDR\BAD\_FL.TXT'

INTO TABLE CUST\_SQLDR TRUNCATE

FIELDS TERMINATED BY ','

(CUST\_ID,CUST\_NM,CUST\_PH,CUST\_CT,DOB DATE "DD-MON-YYYY")

* CHANGING THE CASE OF THE DATA FROM LOWER TO UPPER WHILE LOADING

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\My\_Documents\SQL\_IMP\_CONCEPTS\SQL\_LOADER\SQL\_LDR\INPUT\_1.TXT'

BADFILE 'E:\My\_Documents\SQL\_IMP\_CONCEPTS\SQL\_LOADER\SQL\_LDR\BAD\_FL.BAD'

INTO TABLE CUST\_SQLDR TRUNCATE

FIELDS TERMINATED BY ','

TRAILING NULLCOLS

(CUST\_ID,

CUST\_NM "UPPER(:CUST\_NM)",

CUST\_PH,

DOB DATE "DD-MON-YYYY",

CUST\_CT "DECODE(:CUST\_CT,'BAN','BANGALORE',:CUST\_CT)")

* DECODING THE VALUE PRESENT IN THE COLUMN TO ANOTHER/REQUIRED VALUE

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\My\_Documents\SQL\_IMP\_CONCEPTS\SQL\_LOADER\SQL\_LDR\INPUT\_1.TXT'

BADFILE 'E:\My\_Documents\SQL\_IMP\_CONCEPTS\SQL\_LOADER\SQL\_LDR\BAD\_FL.BAD'

INTO TABLE CUST\_SQLDR TRUNCATE

FIELDS TERMINATED BY ','

(CUST\_ID,

CUST\_NM ,

CUST\_PH,

DOB DATE "DD-MON-YYYY",

CUST\_CT "DECODE(:CUST\_CT,'BAN','BANGALORE',:CUST\_CT)")

* INSERTING A DEFAULT VALUE TO A COLUMN

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\My\_Documents\SQL\_IMP\_CONCEPTS\SQL\_LOADER\SQL\_LDR\INPUT\_1.TXT'

BADFILE 'E:\My\_Documents\SQL\_IMP\_CONCEPTS\SQL\_LOADER\SQL\_LDR\BAD\_FL.BAD'

INTO TABLE CUST\_SQLDR TRUNCATE

FIELDS TERMINATED BY ','

TRAILING NULLCOLS

(CUST\_ID ,

CUST\_NM ,

CUST\_PH,

DOB DATE "DD-MON-YYYY",

CUST\_CT CONSTANT 'BANGALORE')

* IF THERE ARE ANY NULLS IN THE COLUMN REPLACE IT WITH THE REQUIRED VALUE

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\My\_Documents\SQL\_IMP\_CONCEPTS\SQL\_LOADER\SQL\_LDR\INPUT\_1.TXT'

BADFILE 'E:\My\_Documents\SQL\_IMP\_CONCEPTS\SQL\_LOADER\SQL\_LDR\BAD\_FL.BAD'

INTO TABLE CUST\_SQLDR TRUNCATE

FIELDS TERMINATED BY ','

TRAILING NULLCOLS

(CUST\_ID ,

CUST\_NM,

CUST\_PH,

DOB DATE "DD-MON-YYYY",

CUST\_CT "NVL(:CUST\_CT,'BAN')")

* WHEN WE USE SEQUENCES

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\My\_Documents\SQL\_IMP\_CONCEPTS\SQL\_LOADER\SQL\_LDR\INPUT\_1.TXT'

BADFILE 'E:\My\_Documents\SQL\_IMP\_CONCEPTS\SQL\_LOADER\SQL\_LDR\BAD\_FL.BAD'

INTO TABLE CUST\_SQLDR TRUNCATE

FIELDS TERMINATED BY ','

TRAILING NULLCOLS

(CUST\_NM,

CUST\_PH,

DOB DATE "DD-MON-YYYY",

CUST\_CT ,

CUST\_ID "SEQ\_LDR.NEXTVAL")

* Use of Case statement

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\My\_Documents\SQL\_IMP\_CONCEPTS\SQL\_LOADER\SQL\_LDR\INPUT.CSV'

INTO TABLE CUST\_SQLDR REPLACE

FIELDS TERMINATED BY ','

(CUST\_ID,CUST\_NM,CUST\_PH,CUST\_CT,C\_DATE DATE “MM-DD-YYYY”,

LOC “CASE WHEN :LOC=’BLR’ THEN ‘BANGALORE’

WHEN :LOC=’HYD’ THEN ‘HYDERABAD’

ELSE :LOC

END”)

Use of Filler

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\My\_Documents\SQL\_IMP\_CONCEPTS\SQL\_LOADER\SQL\_LDR\INPUT.CSV'

INTO TABLE CUST\_SQLDR REPLACE

FIELDS TERMINATED BY ','

(CUST\_ID FILLER ,CUST\_NM,CUST\_PH,CUST\_CT)

Use of Concat

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\ORCL\_SRC\emp\_11.txt'

Badfile 'E:\ORCL\_SRC\emp\_bad.txt'

discardfile 'E:\ORCL\_SRC\emp\_discard.txt'

INTO TABLE EMPP\_1 truncate

FIELDS TERMINATED BY ','

trailing nullcols

(empno,

fname BOUNDFILLER,

lname BOUNDFILLER,

ename ":fname||:lname"

)

Having Commas in Address field

OPTIONS (SKIP=1)

LOAD DATA

INFILE 'E:\ORCL\_SRC\address\_input.txt'

Badfile 'E:\ORCL\_SRC\add\_bad.txt'

discardfile 'E:\ORCL\_SRC\add\_discard.txt'

INTO TABLE address insert

FIELDS TERMINATED BY ','

optionally enclosed by '"'

(col1,col2)

col1,col2

1,"11,us"

2,"12,uk"

3,"13,up"

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | | | | | * USING DIRECT PATH LOAD   In command prompt,  E:\>SQLLDR SYSTEM/ECC\_76 CONTROL='E:\SQL\_LOADER\SQL\_CONTROL.TXT' DIRECT=TRUE  Using ADD\_MONTHS  OPTIONS (SKIP=1)  LOAD DATA  INFILE 'E:\ORCL\_SRC\TGT2.txt'  BADFILE 'E:\ORCL\_SRC\BAD\_tgt2.txt'   INTO TABLE tgt\_4 truncate  FIELDS TERMINATED BY ','  TRAILING NULLCOLS  (  Empno,ename,sal,joining\_date,expire\_date "add\_months(:joining\_date,24)")  Using SUBSTR  OPTIONS (SKIP=1)  LOAD DATA  INFILE 'E:\ORCL\_SRC\seq\_cust.txt'  BADFILE 'E:\ORCL\_SRC\BAD\_seq\_sub.txt'  INTO TABLE seq\_cust\_sub TRUNCATE  FIELDS TERMINATED BY ','  TRAILING NULLCOLS  (  cname BOUNDFILLER,  FNAME "substr(:cname,1,3)",  LNAME "substr(:cname,4)",  CUST\_CT,  CUST\_ID "seq\_ldrsub.NEXTVAL")   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | | | | | * USING DIRECT PATH LOAD   In command prompt,  E:\>SQLLDR SYSTEM/ECC\_76 CONTROL='E:\SQL\_LOADER\SQL\_CONTROL.TXT' DIRECT=TRUE  Using ADD\_MONTHS  OPTIONS (SKIP=1)  LOAD DATA  INFILE 'E:\ORCL\_SRC\TGT2.txt'  BADFILE 'E:\ORCL\_SRC\BAD\_tgt2.txt'   INTO TABLE tgt\_4 truncate  FIELDS TERMINATED BY ','  TRAILING NULLCOLS  (  Empno,ename,sal,joining\_date,expire\_date "add\_months(:joining\_date,24)")  Using SUBSTR  OPTIONS (SKIP=1)  LOAD DATA  INFILE 'E:\ORCL\_SRC\seq\_cust.txt'  BADFILE 'E:\ORCL\_SRC\BAD\_seq\_sub.txt'  INTO TABLE seq\_cust\_sub TRUNCATE  FIELDS TERMINATED BY ','  TRAILING NULLCOLS  (  cname BOUNDFILLER,  FNAME "substr(:cname,1,3)",  LNAME "substr(:cname,4)",  CUST\_CT,  CUST\_ID "seq\_ldrsub.NEXTVAL")  For fixed length file  LOAD DATA  INFILE '\\machine123\c\data\_file.txt'  TRUNCATE  INTO TABLE dept\_sqlldr  WHEN deptno <> '20'  (deptno POSITION (1:3),  dname POSITION (4:13),  loc POSITION (14:22))    Content of data\_file.txt:  dno dname loc  10 Accounts Bangalore  20 Transport Bangalore  30 Operations Bangalore | | |  | | --- | |  | |  |  |  |  |  |     For Tab Delimited File    LOAD DATA  INFILE \*  TRUNCATE  INTO TABLE dept\_sqlldr  FIELDS TERMINATED BY '\t'  OPTIONALLY ENCLOSED BY "'"  TRAILING NULLCOLS  (deptno "TRIM (:deptno)",  dname "TO\_CHAR (:dname)",  loc "SUBSTR (:loc, 1, 3)",  dt "SYSDATE")    BEGINDATA  Deptno dname loc  10 'Accounts' 'Bangalore'  20 'Transport' 'Bangalore'  30 'Operations' 'Bangalore' |
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